



In The United States Patent and Trademark Office

Gp 3743

Applicants: Ming King Wong  
Serial No.: 09/840,426  
Filing Date: 04/20/2001  
Title: Interchangeable Piezoelectric Lighter

Examiner: n/a  
Group Art Unit: 3743

Date: May 1, 2003

Request for Corrected Application Publication

Box PG Pub  
Commissioner of Patents  
Washington, D.C. 20231

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TECHNOLOGY CENTER R3700

Sir:

The applicant believes that there are material errors in the above published patent application. Specifically, the 4 drawings do not belong to applicant's application. Applicant has filed the application with formal drawings. It appears that the drawings may have been misplaced by the office. The applicant enclosed a duplicate of applicant's original application and a certified copy of the application. As you will notice, the drawings shown on applicant's original applications are different from the drawings shown on the certified copied application. Enclosed are duplicates of transmittal letter, returned postcards, and filing receipts for the application which is provided to verify the correct number of drawings submitted by the applicant.

Accordingly, applicant believes that the errors to be material, and thus request the application's publication be corrected by the Office and that we also believe no fee should be due. However, if any fees are required, please charge the fee to the deposit account number: 502111. Enclosed herewith are new sets of formal drawings of figures 1-4 for your review.

Thank you very much for your assistance.

Respectfully submitted,

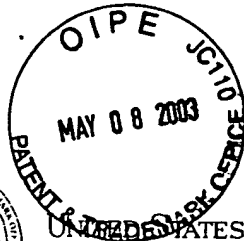
Raymond Y. Chan  
Reg. Nr.: 37,484  
108 N. Ynez Ave., Suite 128  
Monterey Park, CA 91754

CERTIFICATE OF MAILING

I hereby certify that this corresponding will be deposited with the United States Postal Service by First Class Mail, postage prepaid, in an envelope addressed to "Mail Stop PG PUB, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450," on the date below.

Date: May 06, 2003

Signature:   
Person Signing: Raymond Y. Chan



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
www.uspto.gov

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
09/840,426	04/20/2001	3743	355	USP1468H-MWL	4	20	1

CONFIRMATION NO. 4187

David and Raymond Patent Group  
1050 Oakdale Lane  
Arcadia, CA 91006

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FILING RECEIPT



\*OC000000006197866\*

Date Mailed: 06/19/2001

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

**Applicant(s)**

Ming King Wong, North Point, HONG KONG;

**Domestic Priority data as claimed by applicant****Foreign Applications****If Required, Foreign Filing License Granted 06/18/2001****Projected Publication Date: 10/24/2002****Non-Publication Request: No****Early Publication Request: No****\*\* SMALL ENTITY \*\*****Title**

Interchangeable piezoelectric lighter

**Preliminary Class**

431

---

Data entry by : LEE, KATY

Team : OIPE

Date: 06/19/2001





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USP1468(A) MWL

THE FOLLOWING ARE RECEIVED TODAY:

RE.: PATENT APPLICATION

APPLICANT: Ming King WONG

TITLE: Interchangeable Piezoelectric Lighter

SPECIFICATION, CLAIMS, ABSTRACT: NO. SHEET(S): 13

DRAWING: NO. SHEET(S): 4

DECLARATION: DATE SIGNED:

Verification of Small Entity Status of applicant

*Assignment*

CHECK NO.: 2243 IN THE AMOUNT OF US\$355.00

Check No.: 2247 in the amount of USD 40.00

*2/8/01, 426*

JC973 U.S. PTO  
09/840426





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DAVID & RAYMOND  
PATENT FIRM  
108 N YNEZ AVE STE 128  
MONTEREY PARK CA 91754-1680

TO: (PLEASE PRINT)

PHONE ( )

ATTN.: ELLIOT A. SALTER  
THE HERITAGE BUILDING  
321 SOUTH MAIN STREET  
PROVIDENCE, RHODE ISLAND  
02903-7128





In the United States Patent and Trademark Office

Commissioner of Patents and Trademarks  
Washington, District of Columbia 20231

Mailed: April 20, 2001  
Attorney Docket: USP1468H-MWL

Sir:

Please file the following enclosed patent application papers:

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Applicant #1, Name: Ming King WONG

MAY 22 2003

Applicant #2, Name: \_\_\_\_\_

TECHNOLOGY CENTER R3700

Title: Interchangeable Piezoelectric Lighter

☒ Specification, Claims, and Abstract: Nr. Of Sheets 13

☒ Declaration: Date Signed: \_\_\_\_\_

☒ Drawing(s): Nr. Of Sheets Enc.: (In Triplicate): Formal: 4 Informal: \_\_\_\_\_

☒ The applicant claims small entity status. See 37 CFR 1.27

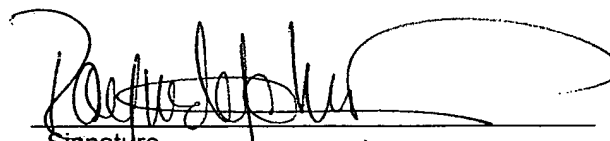
☒ Assignment; please record and return; recordal fee enclosed.

☒ Check for \$ 355.00 for:

☒ \$ 355.00 for filing fee (not more than three independent claims and twenty total claims are presented).

☒ \$ 40.00 Additional of Assignment is enclosed for recordal.

Very respectfully,

  
\_\_\_\_\_  
Signature  
Raymond Y. C. Chan  
Reg. Nr. : 37,484

1050 Oakdale Lane,  
Arcadia, CA 91006

Certificate of Mailing

Express Mail: EL 745709553US

I hereby certify that this paper or fee is being deposited with the United States Postal Service using "Express Mail Post Office To Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to "Commissioner of Patents and Trademarks, Washington, DC 20231".

Signature: \_\_\_\_\_

Date: 04/20/2001



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PTO/SB/05 (11-00)

Approved for use through 10/31/2002. OMB 0651-0032

U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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<b>UTILITY PATENT APPLICATION TRANSMITTAL</b>  (Only for new nonprovisional applications under 37 CFR 1.53(b))	Attorney Docket No.	USP1468H-MWL
	First Inventor	Ming King WONG
	Title	Interchangable Piezoelectric Lighter
	Express Mail Label No.	EL 745709553 US

<b>APPLICATION ELEMENTS</b> See MPEP chapter 600 concerning utility patent application contents.	<b>ADDRESS TO:</b> Assistant Commissioner for Patents Box Patent Application Washington, DC 20231
1. <input checked="" type="checkbox"/> Fee Transmittal Form (e.g., PTO/SB/17) (Submit an original and a duplicate for fee processing) 2. <input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. 3. <input checked="" type="checkbox"/> Specification (Total Pages <b>13</b> ) (preferred arrangement set forth below) - Descriptive title of the invention - Cross Reference to Related Applications - Statement Regarding Fed sponsored R & D - Reference to sequence listing, a table, or a computer program listing appendix - Background of the Invention - Brief Summary of the Invention - Brief Description of the Drawings (if filed) - Detailed Description - Claim(s) - Abstract of the Disclosure 4. <input checked="" type="checkbox"/> Drawing(s) (35 U.S.C. 113) (Total Sheets <b>4</b> ) 5. Oath or Declaration (Total Pages <b>1</b> ) a. <input type="checkbox"/> Newly executed (original or copy) b. <input type="checkbox"/> Copy from a prior application (37 CFR 1.63 (d)) (for continuation/divisional with Box 18 completed) i. <input type="checkbox"/> <b>DELETION OF INVENTOR(S)</b> Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b). 6. <input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76	7. <input type="checkbox"/> CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix) 8. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary) a. <input type="checkbox"/> Computer Readable Form (CRF) b. Specification Sequence Listing on: i. <input type="checkbox"/> CD-ROM or CD-R (2 copies); or ii. <input type="checkbox"/> paper c. <input type="checkbox"/> Statements verifying identity of above copies
<b>ACCOMPANYING APPLICATION PARTS</b>	
9. <input type="checkbox"/> Assignment Papers (cover sheet & document(s)) 10. <input type="checkbox"/> 37 CFR 3.73(b) Statement (when there is an assignee) <input type="checkbox"/> Power of Attorney 11. <input type="checkbox"/> English Translation Document (if applicable) 12. <input type="checkbox"/> Information Disclosure Statement (IDS)/PTO-1449 <input type="checkbox"/> Copies of IDS Citations 13. <input type="checkbox"/> Preliminary Amendment 14. <input checked="" type="checkbox"/> Return Receipt Postcard (MPEP 503) (Should be specifically itemized) 15. <input type="checkbox"/> Certified Copy of Priority Document(s) (if foreign priority is claimed) 16. <input type="checkbox"/> Request and Certification under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent. 17. <input type="checkbox"/> Other: _____	

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP)

of prior application No. \_\_\_\_\_

Prior application information:

Examiner \_\_\_\_\_

Group Art Unit \_\_\_\_\_

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

## 19. CORRESPONDENCE ADDRESS

☐ Customer Number or Bar Code Label

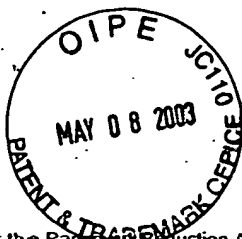
(Insert Customer No. or Bar Code Label here)

or ☒ Correspondence address below

Name	David and Raymond Patent Group				
	1050 Oakdale Lane				
Address					
City	Arcadia	State	CA	Zip Code	91006
Country	USA	Telephone	626-5719812	Fax	626-5719813

Name (Print/Type)	Raymond Y. Chan	Registration No. (Attorney/Agent)	37,484
Signature		Date	04/20/03

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.



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**FEE TRANSMITTAL**  
**for FY 2001**

Patent fees are subject to annual revision.

TOTAL AMOUNT OF PAYMENT

(\$ 355.00)

## Complete if Known

Application Number	
Filing Date	
First Named Inventor	Ming King WONG
Examiner Name	
Group Art Unit	
Attorney Docket No.	USP1468H-MWL

## METHOD OF PAYMENT

- 1.
- ☐
- The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:

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☐ Charge Any Additional Fee Required.  
Under 37 CFR 1.16 and 1.17☒ Applicant claims small entity status.  
See 37 CFR 1.27

- 2.
- ☒
- Payment Enclosed:

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## FEE CALCULATION

## 1. BASIC FILING FEE

Large Entity Fee Code	Small Entity Fee Code	Fee Description	Fee Paid
101 710	201 355	Utility filing fee	\$355
106 320	206 160	Design filing fee	
107 490	207 245	Plant filing fee	
108 710	208 355	Reissue filing fee	
114 150	214 75	Provisional filing fee	

SUBTOTAL (1) (\$ 355.00)

## 2. EXTRA CLAIM FEES

Total Claims	Extra Claims	Fee from below	Fee Paid
Independent Claims	-20** =	X	
Multiple Dependent	-3** =	X	

Large Entity Fee Code	Small Entity Fee Code	Fee Description
103 18	203 9	Claims in excess of 20
102 80	202 40	Independent claims in excess of 3
104 270	204 135	Multiple dependent claim, if not paid
109 80	209 40	** Reissue independent claims over original patent
110 18	210 9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$ 0)

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

## 3. ADDITIONAL FEES

Large Entity Fee Code	Small Entity Fee Code	Fee Description	Fee Paid
105 130	205 65	Surcharge - late filing fee or oath	
127 50	227 25	Surcharge - late provisional filing fee or cover sheet	
139 130	139 130	Non-English specification	
147 2,520	147 2,520	For filing a request for ex parte reexamination	
112 920*	112 920*	Requesting publication of SIR prior to Examiner action	
113 1,840*	113 1,840*	Requesting publication of SIR after Examiner action	
115 110	215 55	Extension for reply within first month	
116 390	216 195	Extension for reply within second month	
117 890	217 445	Extension for reply within third month	
118 1,390	218 695	Extension for reply within fourth month	
128 1,890	228 945	Extension for reply within fifth month	
119 310	219 155	Notice of Appeal	
120 310	220 155	Filing a brief in support of an appeal	
121 270	221 135	Request for oral hearing	
138 1,510	138 1,510	Petition to institute a public use proceeding	
140 110	240 55	Petition to revive - unavoidable	
141 1,240	241 620	Petition to revive - unintentional	
142 1,240	242 620	Utility issue fee (or reissue)	
143 440	243 220	Design issue fee	
144 600	244 300	Plant issue fee	
122 130	122 130	Petitions to the Commissioner	
123 50	123 50	Processing fee under 37 CFR 1.17(q)	
126 180	126 180	Submission of Information Disclosure Stmt	
581 40	581 40	Recording each patent assignment per property (times number of properties)	
146 710	246 355	Filing a submission after final rejection (37 CFR § 1.129(a))	
149 710	249 355	For each additional invention to be examined (37 CFR § 1.129(b))	
179 710	279 355	Request for Continued Examination (RCE)	
169 900	169 900	Request for expedited examination of a design application	
Other fee (specify)			

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 0)

## SUBMITTED BY

Name (Print/Type)

Raymond Y. Chan

Registration No.  
(Attorney/Agent)

37,484

Complete (if applicable)

Telephone

626-571-9812

Signature

Date

04/23/2001

**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.





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Applicant or Patentee: \_\_\_\_\_

Attorney's \_\_\_\_\_

Serial or Patent No.: \_\_\_\_\_

Docket No.: USP1468H-MWE

Filed or Issued: \_\_\_\_\_

For: \_\_\_\_\_

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY  
STATUS (37 CFR 1.9 (f) and 1.27 (b)) - INDEPENDENT INVENTOR**

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9 (c) for purposes of paying reduced fees under section 41 (a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled:

Interchangeable Piezoelectric Lighter described in:

- ☒ the specification filed herewith  
☐ application serial no. \_\_\_\_\_, filed \_\_\_\_\_  
☐ patent no. \_\_\_\_\_, issued \_\_\_\_\_

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9 (c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9 (d) or a non profit organization under 37 CFR 1.9 (e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☐ no such person, concern, or organization  
☒ person, concern or organizations listed below \*

\*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

FULL NAME Ming Wide Lighter Co., Ltd.ADDRESS 12/F, North Point Ind., Bldg., 499 King's Road, North Point, Hong Kong☐ INDIVIDUAL ☒ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

FULL NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

FULL NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28 (b))

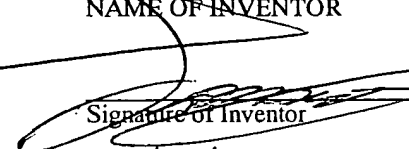
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statements is directed.

Ming King Wong

NAME OF INVENTOR

NAME OF INVENTOR

NAME OF INVENTOR

  
Signature of Inventor

Signature of Inventor

Signature of Inventor

04/18/2001

Date

Date

Date



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Attorney/Docket No: USP1468H-MWE

### DECLARATION FOR UTILITY PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, mailing address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Interchangeable Piezoelectric Lighter

the specification of which is attached hereto unless the following box is checked:

☐ was filed on \_\_\_\_\_ as United States Application Number or PCT International Application Number \_\_\_\_\_ and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 USC 119(a)(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking box, any foreign application for patent or inventor's certificate, or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

(Number)	(Country)	(Day/Month/Year Filed)
_____	_____	_____
(Number)	(Country)	(Day/Month/Year Filed)
_____	_____	_____
(Number)	(Country)	(Day/Month/Year Filed)
_____	_____	_____

Priority Claimed	Certified Copy Attached
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

☐ Additional foreign application numbers are listed on a supplemental priority data sheet attached hereto.

I hereby claimed the benefit under 35 USC 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (Day/Month/Year)	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet attached hereto.
_____	_____	
_____	_____	
_____	_____	

I hereby appoint the following attorney(s) and/or agent(s), with full powers of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

**Raymond Yat Chan, Reg. No. 37,484**

Address all correspondence to: 1050 Oakdale Lane, Arcadia, CA 91006-2222, U.S.A.

Telephone Calls to: (626) 571-9812

Facsimile Calls to: (626) 571-9813

I hereby declare that all Statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor (given name, family name) Ming King Wong

Inventor's signature	Date
<u>[Signature]</u>	<u>04/18/2001</u>
Residence	Citizenship
<u>Same as below</u>	<u>Hong Kong, P.R.C.</u>
Mailing Address <u>12/F, North Point Ind., Bldg., 499 King's Road, North Point, Hong Kong</u>	

Full name of second joint inventor, if any (given name, family name) \_\_\_\_\_

Second Inventor's signature	Date
_____	_____
Residence	Citizenship
_____	_____
Mailing Address _____	

☐ Additional inventors are being named on separately numbered sheets attached hereto.

**PATENTS ONLY**

Tab settings → → →

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

Ming King WONG

Additional names(s) of conveying party(ies)

☐ Yes ☒ No

3. Nature of conveyance:

☒ Assignment

☐ Merger

☐ Security Agreement

☐ Change of Name

☐ Other

Execution Date: 04/18/2001

2. Name and address of receiving party(ies):

Name: Ming Wide Lighter Co., Ltd.

Internal Address: 12/F, North Point Ind., Bldg.,

499 King's Road, North Point, Hong Kong

Street Address: Same as above

City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_

Additional name(s) & address(es)

☐ Yes ☒ No

4. Application number(s) or registration numbers(s):

If this document is being filed together with a new application, the execution date of the application is: 04/18/2001

A. Patent Application No.(s)

B. Patent No.(s)

Additional numbers

☐ Yes ☒ No

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**MAY 22 2003**

**TECHNOLOGY CENTER R3700**

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: David and Raymond Patent Group

Internal Address: 108 N. Ynez Ave., Suite 128

Monterey Park, CA 91754, USA

Street Address: Same as above

City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_

6. Total number of applications and patents involved:

**01**

7. Total fee (37 CFR 3.41):.....\$ 40.00

☒ Enclosed

☐ Authorized to be charged to deposit account

8. Deposit account number:

(Attach duplicate copy of this page if paying by deposit account)

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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Raymond Y. Chan

Name of Person Signing

Raymond Y. Chan  
Signature

04/20/2001  
Date

**04**

Total number of pages including cover sheet, attachments, and

## ASSIGNMENT

WHEREAS, I (we), Ming King Wong  
whose post office address(es) appear(s) below, hereinafter referred to as ASSIGNOR, have invented a  
certain new and useful improvements in  
Interchangeable Piezoelectric Lighter  
(hereinafter referred to as the INVENTION) for which an application for United States Letters Patent was

- ☒ executed on even data herewith  
☐ executed on:  
☐ filed on:

Serial No.:

WHEREAS, Ming Wide Lighter Co., Ltd.  
whose post office address is 12/F, North Point Ind., Bldg., 499 King's Road, North Point, Hong Kong  
hereinafter referred to as ASSIGNEE, is desirous of acquiring the entire right, title and interest in and to the  
same in the United States;

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby  
acknowledged, I (we), ASSIGNOR, by these presents do sell, assign and transfer unto said ASSIGNEE, the  
entire right, title, and interest in and to said INVENTION and application throughout the United States of  
America, including any and all Letters Patent granted on any division, continuation, continuation-in-part  
and reissue of said application.

ALSO, ASSIGNOR hereby agrees to execute any documents that legally may be required in  
connection with the filing, prosecution and maintenance of said application or any other patent  
application(s) in the United States for said INVENTION, including additional documents that may be  
required to affirm the rights of ASSIGNEE in and to said INVENTION, all without further consideration.  
ASSIGNOR also agrees, without further consideration and at ASSIGNEE'S expense, to identify and  
communicate to ASSIGNEE at ASSIGNEE'S request documents and information concerning the INVENTION  
that are within ASSIGNOR'S possession or control, and to provide further assurances and testimony on  
behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the prosecution, maintenance  
and defense of any patent application or patent encompassed within the terms of this instrument.  
ASSIGNOR'S obligations under this instrument shall extend to ASSIGNOR'S heirs, executors, administrators  
and other legal representatives.

ALSO, ASSIGNOR hereby authorizes and requests the Commissioner of Patents and Trademarks to  
issue any and all Letters Patent referred to above to ASSIGNEE, as the ASSIGNEE of the entire right, title  
and interest in and to the same, for ASSIGNEE'S sole use and behoof; and for the use and behoof of  
ASSIGNEE'S legal representatives and successors, to the full end of the term for which such Letters Patent  
may be granted, as fully and entirely as the same would have been held by ASSIGNOR had this assignment  
and sale not been made.

ASSIGNOR authorizes Raymond Yat Chiu Chan to insert or complete any information in this  
document needed to effect its recordal in the U.S. Patent and Trademark Office.

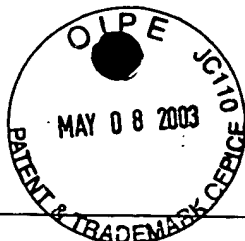
ASSIGNOR NAME: Ming King Wong

ADDRESS: 12/F, North Point Ind., Bldg., 499 King's Road, North Point, Hong Kong

SIGNATURE

04/18/2001

DATE



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MAY 22 2003

TECHNOLOGY CENTER R3700

Applicant or Patentee:

Serial or Patent No.:

Filed or Issued:

For:

Attorney's

Docket No.:

USP1468A=MWL

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY  
STATUS (37 CFR 1.9 (f) and 1.27 (c)) - SMALL BUSINESS CONCERN**

I hereby declare that I am

☐ the owner of the small business concern identified below:

☒ an official of the small business concern empowered to act on behalf of the concern identified below:

Name of Concern: Ming Wide Lighter Co., Ltd.

Address of Concern: 12/F, North Point Ind., Bldg., 499 King's Road, North Point, Hong Kong

I hereby declare that the above identified small business concern qualifies as a small business concern as defined in 13 CFR 121.3-18, and reproduced in 37 CFR 1.9 (d), for purposes of paying reduced fees under section 41(a) and (b) of title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power of control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention entitled:

Interchangable Piezoelectric Lighter

described in:

☒ the specification filed herewith

☐ application serial no. \_\_\_\_\_, filed \_\_\_\_\_

☐ patent no. \_\_\_\_\_, issued \_\_\_\_\_

If the rights held by the above identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed below \* and no rights to the invention are held by any person, other than the inventor, who could not qualify as a small business concern under 37 CFR 1.9(d) or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

\*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as a small entities. (37 CFR 1.27)

Full Name:

Address:

☐ INDIVIDUAL ☒ SMALL BUSINESS CONCERN ☐ NON PROFIT ORGANIZATION

Full Name:

Address:

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NON PROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28 (b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statements is directed.

Name of Person Signing: Ming King Wong

Title of Person Other than Owner: Officer

Address of Person Signing: 12/F, North Point Ind., Bldg., 499 King's Road, North Point, Hong Kong

Signature

04/18/2001

Date



USP1468H-MWL

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Ming King Wong

Filing Date: \_\_\_\_\_

Serial No.: \_\_\_\_\_

Examiner: \_\_\_\_\_

Art Unit: \_\_\_\_\_

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MAY 22 2003

TECHNOLOGY CENTER R3700

Title Interchangable Piezoelectric Lighter

To: The Commissioner of  
Patents and Trademarks  
Washington, D.C. 20231

POWER OF ATTORNEY

As a named assignee of the entire interest of the above identified application, I hereby appoint the following attorney(s) and/or agent(s) to prosecute the application identified above, and to transact all business in the Patent and trademark Office connected therewith:

**Raymond Yat Chan, Reg. No. 37,484**

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NAME OF ASSIGNEE: Ming Wide Lighter Co., Ltd.

NAME OF PERSON SIGNING: Ming King Wong

TITLE: Officer

ADDRESS: 12/F, North Point Ind., Bldg., 499 King's Road, North Point, Hong Kong

SIGNATURE

04/18/2001

DATE



Title

**Interchangeable Piezoelectric Lighter**

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**TECHNOLOGY CENTER R3700**

**Background of the Present Invention**

**Field of Invention**

- 5           The present invention relates to piezoelectric lighters, and more particularly to an interchangeable piezoelectric lighter which is adapted for selectively interchanging a type of flame between a visible flame, a torch flame, and a windproof flame.

**Description of Related Arts**

- Piezoelectric lighters have been known and sold throughout the United States.
- 10   The conventional piezoelectric lighters are generally classified into two categories which is the visible flame type piezoelectric lighter and the torch flame type piezoelectric lighter. The visible flame type piezoelectric lighter, such as a cigarette lighter, allows gas emitted from the nozzle directly burned in the air to produce a regular visible flame. A
- 15   windproof type piezoelectric lighter, has a re-igniting properties wherein an ignition element is heated up when igniting the lighter in such a manner that once the flame is blown out, the ignition element remains in high temperature and re-ignites the emitted gas to regain the flame. Thus, a torch lighter is adapted for providing a high temperature torch flame wherein the torch flame is more powerful than the visible flame so as to increase the burning purpose of the lighter.

- 20           For smokers, especially cigar and pipe smokers, do not ready like to use the torch flame type piezoelectric lighter since the high temperature torch flame will destroy the taste of the tobacco. However, it is a hassle for the smoker to light a cigarette or a cigar outdoors while using the visible flame type piezoelectric lighter. Thus, it is inconvenient for the smokers to carry different types of lighter at once.

- 25           Moreover, an improved piezoelectric lighter is adapted for selecting the flame by manipulating an ignition button wherein when a downward force is applied on the

ignition button to depress the ignition button, such lighter provides a torch flame and when the downward force is released, the lighter provides a visible flame. However, a user must manipulate the ignition button and leads to different operational results depending on the user, which may be considered disadvantageous in practical use. Thus, the lighter must require other parts to incorporate therewith for controlling a flow of gas. Generally, a lighter cap is incorporated with the lighter for actuating a valve thereof such that when the lighter cap is opened, the gas is released from the gas chamber through the valve. This adverse result affects the ease of leaking the gas from the gas chamber. So, such improved lighter still has drawbacks in practical use and hence there has been a demand for an interchangeable lighter which is improved in both safety and operability.

### Summary of the Present Invention

A main object of the present invention is to provide an interchangeable piezoelectric lighter which is adapted for selectively interchanging a type of flame between a visible flame, torch flame, and a windproof flame.

Another object of the present invention is to provide an interchangeable piezoelectric lighter which produces both visible flame, windproof flame, and torch flame for selectively lighting a cigarette, cigar and pipe conveniently.

Another object of the present invention is to provide an interchangeable piezoelectric lighter wherein the visible flame, the torch flame, and the windproof flame are selectively produced by controlling a flame interchanging means such that no mechanism is required for users to manipulate in order to select the flame such as the ignition button.

Another object of the present invention is to provide an interchangeable piezoelectric lighter wherein the lighter is improved in both safety and operability. A user selects a desired flame by manipulating the flame interchanging means and then ignites the lighter in one single action, which is advantageous in practical use.

Accordingly, in order to accomplish the above objects, the present invention provides an interchangeable piezoelectric lighter, comprising:



a casing receiving a liquefied gas storage and a switcher cavity provided therein;

a gas valve operatively extended from the liquefied gas storage for controlling a flow of gas;

5 a piezoelectric unit fitted in the casing for generating piezoelectricity;

an ignition button slidably fitted in the casing in a vertically movable manner wherein the ignition button is attached to a top end of the piezoelectric unit and arranged to compress the piezoelectric unit when the ignition button is depressed; and

10 a flame interchanging means for selectively interchanging a flame of the piezoelectric lighter, comprising a valve switcher movably received in the switcher cavity wherein the valve switcher comprises at least two gas nozzles selectively and coaxially aligning with the gas valve for the flow of gas passing therethrough so as to produce different flames.

### Brief Description of the Drawings

15 Fig. 1 is a perspective view of an interchangeable piezoelectric lighter according to a preferred embodiment of the present invention.

Fig. 2 is an exploded perspective view of the interchangeable piezoelectric lighter according to the above preferred embodiment of the present invention.

20 Fig. 3 is a sectional view of the interchangeable piezoelectric lighter according to the above preferred embodiment of the present invention.

Fig. 4 illustrates an alternative mode of a flame interchanging means of the interchangeable piezoelectric lighter according to the above preferred embodiment of the present invention.

## Detailed Description of the Preferred Embodiment

Referring to Figs. 1 to 3 of the drawings, an interchangeable piezoelectric lighter according to a preferred embodiment of the present invention is illustrated. The interchangeable piezoelectric lighter, such as a standard piezoelectric lighter, comprises a casing 10 receiving a liquefied gas storage 11 and a switcher cavity 12 provided therein, a gas valve 13 operatively extended from the liquefied gas storage 11 for controlling a flow of gas, a piezoelectric unit 14 fitted in the casing 10 for generating piezoelectricity, and an ignition button 15 slidably fitted in the casing 10 in a vertically movable manner.

The piezoelectric unit 14, which is disposed in the casing 10, comprises a movable operating part 141 extended upwardly and an ignition tip 142 extended to a position towards to the gas valve 13, wherein when the movable operating part 141 is depressed downwardly, the ignition tip 142 generates sparks to ignite the gas emitted from the gas valve 13 at the same time.

The ignition button 15 is attached to a top end of the movable operating part 141 of the piezoelectric unit 13 and operatively connected to the gas valve 13 via a gas lever 16. Accordingly, when the ignition button 15 is pushed downward, the movable operating part 141 of the piezoelectric unit 14 is compressed for generating piezoelectricity through and out the ignition tip 142. At the same time, the gas lever 16 is simultaneously pressed by the ignition button 15 to release gas through the gas valve 13 so as to ignite the releasing gas by the spark from the ignition tip 142.

The interchangeable piezoelectric lighter further comprises a flame interchanging means 20 for selectively interchanging a flame of the piezoelectric lighter, comprising a valve switcher 21 movably received in the switcher cavity 12 in a rotatably movable manner wherein the valve switcher 21 comprises at least two gas nozzles 211 selectively and coaxially aligning with the gas valve 13 for the flow of gas passing therethrough so as to produce different flames.

The valve switcher 21 has a lower portion exposed to an exterior of the casing 10 wherein a plurality of flanges 214 are spacedly protruded on an outer circumferential surface of the lower portion of the valve switcher 21 for being rotated easily and an upper portion rotatably received in a cover 18 which is supported on the casing 10. The cover 18 has a through hole 181 provided thereon and arranged to align with gas valve 13 for

the flame passing through. Thus, a cap 19 is pivotally mounted on the cover 18 for protecting the valve nozzle 211.

The flame interchanging means 20 further comprises a gas adapter 22 fitted in the switcher cavity 12 wherein the valve switcher 21 is supported thereon and a gas emitter 22, made of conductive material, having an inlet end operatively extended from the gas valve 13 and a gas releasing end penetrated through the gas adapter 22 so as to selectively align with one of the gas nozzles 211, 212.

According to the preferred embodiment, the valve switcher 21 having a circular shaped rotatably and sealedly mounted on the gas adapter 22 wherein the valve switcher 21 comprises three gas nozzles 211, which are a visible gas nozzle 211a, a torch nozzle 211b, and a windproof nozzle 211c, axially provided on the valve switcher 21 respectively, so as to selectively align with the gas emitter 23. Each of the three gas nozzles 211 has a nozzle head 213 appearing from a ceiling of the valve switcher 21 and a gas inlet 212 provided on a bottom surface of the valve switcher 21 and adapted for sealedly aligning with the gas releasing end of the gas emitter 23 such that the releasing gas is adapted for transmitting from the gas valve 13 to the respective gas nozzle 211 through the gas emitter 23, as shown in Fig. 3.

Accordingly, a gas conduit 17, which is made of non-conductive material such as plastic, is connected between the gas valve 13 and the gas emitter 23 wherein the ignition tip 142 is extended to a position close to the gas emitter 23 in such a manner that the piezoelectricity generated by the piezoelectric unit 14 is transmitted to the gas emitter 23 by conduction for igniting the releasing gas from the gas valve 13. However, the piezoelectricity cannot transmit to the gas valve 13 through the gas conduit 17 because the gas conduit 17 functions as a resistance for resisting the piezoelectricity transmitting therethrough.

The flame interchanging means 20 further comprises a guiding unit 24 for guiding the gas emitter 23 aligned with the respective gas nozzle 211 wherein the guiding unit 24 comprises at least a protrusion 241 upwardly provided on a top surface of the gas adapter 22 and at least a corresponding indentation 242 formed on a bottom surface of the valve switcher 21 in such a manner that the protrusion 241 is fittedly engaged with the indentation 242 when the gas emitter 23 is aligned with the respective gas nozzle 211, so as to ensure the alignment thereof.

The interchangeable piezoelectric lighter further comprises a supporting frame 30 comprising a central shaft 31 upwardly extended from the switcher cavity 12 wherein the valve switcher 21 is rotatably supported by the central shaft 31 and a resilient element 32 coaxially mounted on the central shaft 31 for applying an urging force against the gas adapter 22.

Accordingly, the valve switcher 21 has a center slot 210 coaxially formed on a bottom surface thereof and the gas adapter 22 has a center through hole 220 coaxially formed thereon in such a manner that the central shaft 31 is penetrated through the center through hole 220 of the gas adapter 22 and rotatably inserted into the center slot 210 of the valve switcher 21.

The resilient element 32, which is a compression spring, is adapted for applying an urging force against the gas adapter 22 to push it upwardly wherein the resilient element 32 has two ends biasing against a base of the central shaft 31 and a bottom surface of the gas adapter 22. Accordingly, the resilient element 32 normally urges and retains the gas adapter 22 in a higher position that the top surface of the gas adapter 22 is tightly contacted with a bottom surface of the valve switcher 21, so as to ensure the gas emitter 23 sealedly aligned with the respective gas nozzle 211 for gas transmitting therebetween.

In order to operate the interchangeable piezoelectric lighter, a user is able to select a type of flame by rotating the valve switcher 21 until the respective gas nozzle 211 is aligned with the gas emitter 23. Then, a downward force must be applied on the ignition button 15 to compress the piezoelectric unit 14 to ignite the piezoelectric lighter of the present invention, as the same as the ignition of the conventional lighter. So, the user does not have to manipulate any part of the lighter to select the flame during the ignition process, which is advantageous in practical use. Thus, for safety purpose, the gas is released from the gas valve 13 which is actuated by the ignition button 15 such that when the downward force is released on the ignition button 15, the gas valve 13 is shut off for preventing the gas releasing accidentally.

Fig. 4 illustrates an alternative mode of the flame interchanging means 20' wherein the valve switcher 21' movably received in the switcher cavity 12' in a horizontally movable manner and arranged to be movably supported on the gas adapter 22'. The valve switcher 21' comprises two gas nozzles 211' which are a visible nozzle

211a' and a torch flame 211b' parallelly provided on the valve switcher 21' respectively, so as to selectively align with the gas emitter 23'. Each of the two gas nozzles 211' has a nozzle head 213' appearing from a ceiling of the valve switcher 21' and a gas inlet 212' provided on a bottom surface of the valve switcher 21' and adapted for sealedly aligning with the gas releasing end of the gas emitter 23' such that the releasing gas is adapted for transmitting from the gas valve 13' to the respective gas nozzle 211' through the gas emitter.

Accordingly, the valve switcher 21' has an elongated guiding slot 210' transversely formed on the bottom surface thereof wherein a head portion of the central shaft 31' of the supporting frame 30' is fitted into the elongated slot 210' in such a manner that the valve switcher 21' is adapted for slidably moving on the gas adapter 22' in a horizontally movable manner. Thus, the guiding slot 210' has a predetermined length adapted for each of the gas nozzles 211' coaxially aligning with the gas emitter 23' and for reinforcing the displacement of the valve switcher 21' so as to prevent the valve switcher 21' departing from the gas adapter 22' when the valve switcher 21' is being pushed.

So, the user is able to select the type of flame by pushing the valve switcher 21' horizontally so as to line up the one of the gas nozzles 211' to the gas emitter 23'. Then the user can simply ignite the piezoelectric lighter of the present invention by pressing the ignition button 15' downwardly as the conventional lighter.

What is Claimed is:

1. An interchangeable piezoelectric lighter, comprising:

a casing receiving a liquefied gas storage and having a switcher cavity provided therein;

5 a gas valve operatively extended from said liquefied gas storage for controlling a flow of gas;

a piezoelectric unit fitted in said casing for generating piezoelectricity;

an ignition button mounted to said casing in a movable manner, wherein said ignition button is arranged to compress said piezoelectric unit when said ignition button  
10 is depressed; and

a flame interchanging means for selectively interchanging a flame of said piezoelectric lighter, comprising a valve switcher movably received in said switcher cavity, wherein said valve switcher comprises at least two gas nozzles selectively and coaxially aligning with said gas valve for said flow of gas passing therethrough so as to  
15 produce different flames.

2. An interchangeable piezoelectric lighter, as recited in claim 1, wherein said flame interchangeable means further comprises a gas adapter fitted in said switcher cavity wherein said valve switcher is supported on said gas adapter and a gas emitter having an inlet end operatively extended from said gas valve and a gas releasing end  
20 penetrated through said gas adapter so as to selectively align with one of said gas nozzles.

3. An interchangeable piezoelectric lighter, as recited in claim 2, wherein said valve switcher, which is adapted for coaxially rotating with respect to said gas adapter, comprises three gas nozzles which are a visible gas nozzle, a torch nozzle, and a windproof nozzle axially provided on said valve switcher respectively, so  
25 as to selectively align with said gas emitter, each of said three gas nozzles having a nozzle head appearing from a ceiling of said valve switcher and a gas inlet provided on a

bottom surface of said valve switcher and adapted for sealedly aligning with said gas releasing end of said gas emitter.

4. An interchangeable piezoelectric lighter, as recited in claim 2, wherein said flame interchanging means further comprises a guiding unit for guiding said gas emitter aligned with said respective gas nozzle wherein said guiding unit comprises at least a protrusion upwardly provided on a top surface of said gas adapter and at least a corresponding indentation formed on said bottom surface of said valve switcher in such a manner that said protrusion is fittedly engaged with said indentation when said gas emitter is aligned with one of said gas nozzles.

5. An interchangeable piezoelectric lighter, as recited in claim 3, wherein said flame interchanging means further comprises a guiding unit for guiding said gas emitter aligned with said respective gas nozzle wherein said guiding unit comprises at least a protrusion upwardly provided on a top surface of said gas adapter and at least a corresponding indentation formed on said bottom surface of said valve switcher in such a manner that said protrusion is fittedly engaged with said indentation when said gas emitter is aligned with one of said gas nozzles.

6. An interchangeable piezoelectric lighter, as recited in claim 2, further comprising a supporting frame comprising a central shaft, upwardly extended from said switcher cavity, for rotatably supporting said central shaft and a resilient element coaxially mounted on said central shaft for applying an urging force against said gas adapter, wherein said valve switcher has a center slot coaxially formed on said bottom surface thereof and said gas adapter has a center through hole coaxially formed thereon in such a manner that said central shaft is penetrated through said center through hole of said gas adapter and rotatably inserted into said center slot of said valve switcher.

7. An interchangeable piezoelectric lighter, as recited in claim 3, further comprising a supporting frame comprising a central shaft, upwardly extended from said switcher cavity, for rotatably supporting said central shaft and a resilient element coaxially mounted on said central shaft for applying an urging force against said gas adapter, wherein said valve switcher has a center slot coaxially formed on said bottom surface thereof and said gas adapter has a center through hole coaxially formed thereon in such a manner that said central shaft is penetrated through said center through hole of said gas adapter and rotatably inserted into said center slot of said valve switcher.

8. An interchangeable piezoelectric lighter, as recited in claim 5, further comprising a supporting frame comprising a central shaft, upwardly extended from said switcher cavity, for rotatably supporting said central shaft and a resilient element coaxially mounted on said central shaft for applying an urging force against said gas adapter, wherein said valve switcher has a center slot coaxially formed on said bottom surface thereof and said gas adapter has a center through hole coaxially formed thereon in such a manner that said central shaft is penetrated through said center through hole of said gas adapter and rotatably inserted into said center slot of said valve switcher.

9. An interchangeable piezoelectric lighter, as recited in claim 6, wherein said resilient element is a compression spring having two ends biasing against a base of said central shaft and a bottom surface of said gas adapter, and wherein said resilient element normally urges and retains said gas adapter in a higher position that said top surface of said gas adapter is tightly contacted with said bottom surface of said valve switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle for gas transmitting therebetween.

10. An interchangeable piezoelectric lighter, as recited in claim 7, wherein said resilient element is a compression spring having two ends biasing against a base of said central shaft and a bottom surface of said gas adapter, and wherein said resilient element normally urges and retains said gas adapter in a higher position that said top surface of said gas adapter is tightly contacted with said bottom surface of said valve switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle for gas transmitting therebetween.

11. An interchangeable piezoelectric lighter, as recited in claim 8, wherein said resilient element is a compression spring having two ends biasing against a base of said central shaft and a bottom surface of said gas adapter, and wherein said resilient element normally urges and retains said gas adapter in a higher position that said top surface of said gas adapter is tightly contacted with said bottom surface of said valve switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle for gas transmitting therebetween.

12. An interchangeable piezoelectric lighter, as recited in claim 2, wherein said valve switcher, which is movably supported on said gas adapter in a horizontally movable manner, comprises two gas nozzles which are a visible nozzle and a torch flame



parallelly provided on said switcher respectively, so as to selectively align with said gas emitter, each of said two gas nozzles having a nozzle head appearing from a ceiling of said valve switcher and a gas inlet provided on a bottom surface of said valve switcher and adapted for sealedly aligning with said gas releasing end of said gas emitter.

5           13. An interchangeable piezoelectric lighter, as recited in claim 12, wherein said flame interchanging means further comprises a guiding unit for guiding said gas emitter aligned with said respective gas nozzle wherein said guiding unit comprises at least a protrusion upwardly provided on a top surface of said gas adapter and at least a  
10           corresponding indentation formed on said bottom surface of said valve switcher in such a manner that said protrusion is fittedly engaged with said indentation when said gas emitter is aligned with one of said gas nozzles.

          14. An interchangeable piezoelectric lighter, as recited in claim 12, further comprising a supporting frame comprising a central shaft, upwardly extended from said switcher cavity, for rotatably supporting said central shaft and a resilient element  
15           coaxially mounted on said central shaft for applying an urging force against said gas adapter, wherein said valve switcher has an elongated guiding slot transversely formed on said bottom surface thereof and said gas adapter has a center through hole coaxially formed thereon in such a manner that said central shaft is penetrated through said center through hole of said gas adapter and slidably inserted into said guiding slot of said valve  
20           switcher.

          15. An interchangeable piezoelectric lighter, as recited in claim 13, further comprising a supporting frame comprising a central shaft, upwardly extended from said switcher cavity, for rotatably supporting said central shaft and a resilient element  
25           coaxially mounted on said central shaft for applying an urging force against said gas adapter, wherein said valve switcher has an elongated guiding slot transversely formed on said bottom surface thereof and said gas adapter has a center through hole coaxially formed thereon in such a manner that said central shaft is penetrated through said center through hole of said gas adapter and slidably inserted into said guiding slot of said valve switcher.

30           16. An interchangeable piezoelectric lighter, as recited in claim 14, wherein said has a predetermined length adapted for each of said gas nozzles coaxially aligning with said gas emitter and for reinforcing a displacement of said valve switcher.

17. An interchangeable piezoelectric lighter, as recited in claim 15, wherein said has a predetermined length adapted for each of said gas nozzles coaxially aligning with said gas emitter and for reinforcing a displacement of said valve switcher.

5 18. An interchangeable piezoelectric lighter, as recited in claim 14, wherein said resilient element is a compression spring having two ends biasing against a base of said central shaft and a bottom surface of said gas adapter, and wherein said resilient element normally urges and retains said gas adapter in a higher position that said top surface of said gas adapter is tightly contacted with said bottom surface of said valve switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle  
10 for gas transmitting therebetween.

19. An interchangeable piezoelectric lighter, as recited in claim 15, wherein said resilient element is a compression spring having two ends biasing against a base of said central shaft and a bottom surface of said gas adapter, and wherein said resilient element normally urges and retains said gas adapter in a higher position that said top  
15 surface of said gas adapter is tightly contacted with said bottom surface of said valve switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle for gas transmitting therebetween.

20. An interchangeable piezoelectric lighter, as recited in claim 17, wherein said resilient element is a compression spring having two ends biasing against a base of  
20 said central shaft and a bottom surface of said gas adapter, and wherein said resilient element normally urges and retains said gas adapter in a higher position that said top surface of said gas adapter is tightly contacted with said bottom surface of said valve switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle for gas transmitting therebetween.

## **Interchangeable Piezoelectric Lighter**

### **Abstract of the Disclosure**

An interchangeable piezoelectric lighter includes a casing having a switcher cavity and a valve switcher rotatably received in the switcher cavity wherein the valve switcher includes at least two gas nozzles axially provided therein. The gas nozzles are adapted for selectively and coaxially aligning with a gas valve for producing different types flames. Therefore, by rotatably switching the valve switcher, the gas valve is adapted to align with the respective gas nozzle for a releasing gas passing therethrough, so as to produce a desired type of flame.

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Ming King Wong

Filing Date: \_\_\_\_\_

Serial No.: \_\_\_\_\_

Examiner: \_\_\_\_\_

Art Unit: \_\_\_\_\_

Title Interchangable Piezoelectric Lighter

To: The Commissioner of  
Patents and Trademarks  
Washington, D.C. 20231

## POWER OF ATTORNEY

As a named assignee of the entire interest of the above identified application, I hereby appoint the following attorney(s) and/or agent(s) to prosecute the application identified above, and to transact all business in the Patent and trademark Office connected therewith:

**Raymond Yat Chan, Reg. No. 37,484**

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NAME OF ASSIGNEE: Ming Wide Lighter Co., Ltd.

NAME OF PERSON SIGNING: Ming King Wong

TITLE: Officer

ADDRESS: 12/F, North Point Ind., Bldg., 499 King's Road, North Point, Hong Kong

SIGNATURE

04/18/2001

DATE

Applicant or Patentee: \_\_\_\_\_ Attorney's  
Serial or Patent No.: \_\_\_\_\_ Docket No.: USP1468H-MWI  
Filed or Issued: \_\_\_\_\_  
For: \_\_\_\_\_

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY  
STATUS (37 CFR 1.9 (f) and 1.27 (b)) – INDEPENDENT INVENTOR**

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9 (c) for purposes of paying reduced fees under section 41 (a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled:

Interchangeable Piezoelectric Lighter described in:

☒ the specification filed herewith  
☐ application serial no. \_\_\_\_\_, filed \_\_\_\_\_  
☐ patent no. \_\_\_\_\_, issued \_\_\_\_\_

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9 (c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9 (d) or a non profit organization under 37 CFR 1.9 (e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

☐ no such person, concern, or organization  
☒ person, concern or organizations listed below \*

\*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

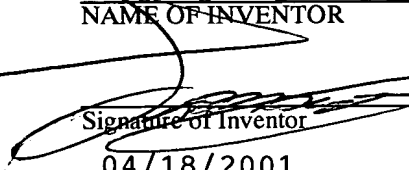
FULL NAME Ming Wide Lighter Co., Ltd.  
ADDRESS 12/F, North Point Ind., Bldg., 499 King's Road, North Point, Hong Kong  
☐ INDIVIDUAL ☒ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

FULL NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

FULL NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28 (b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statements is directed.

Ming King Wong  
NAME OF INVENTOR NAME OF INVENTOR NAME OF INVENTOR  
 Signature of Inventor Signature of Inventor Signature of Inventor  
04/18/2001  
Date Date Date

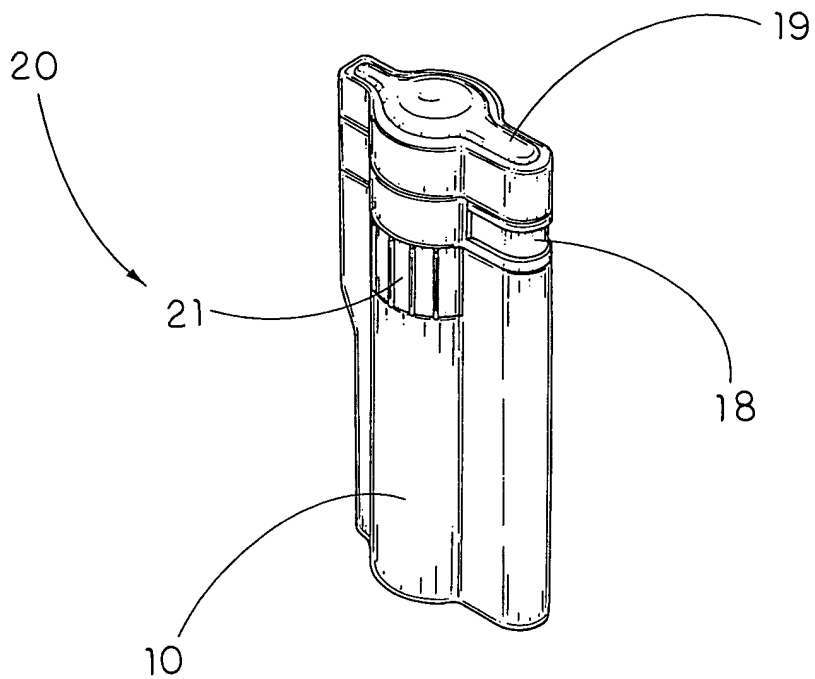


FIG.1

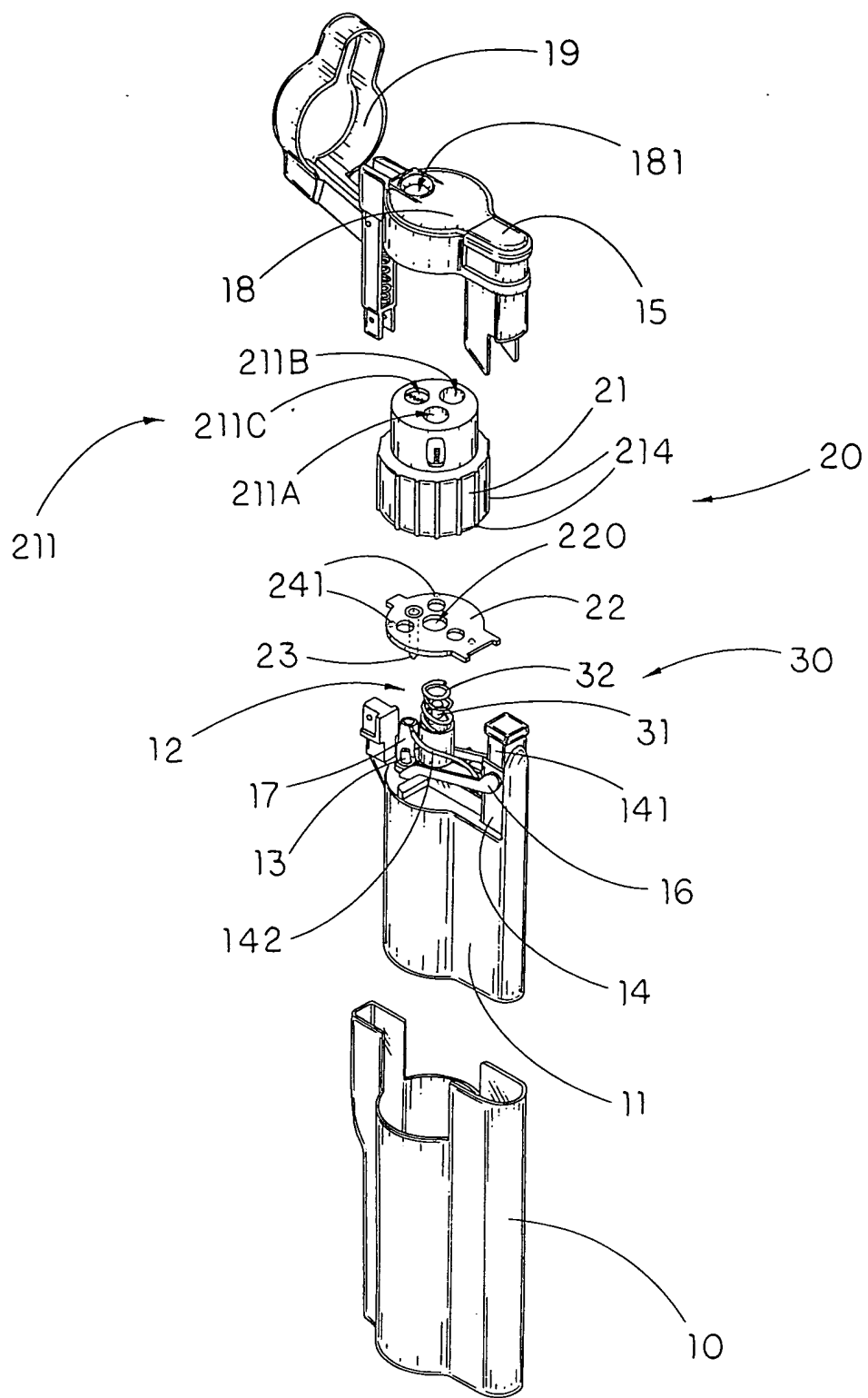
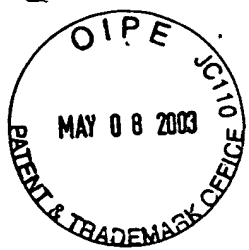


FIG. 2

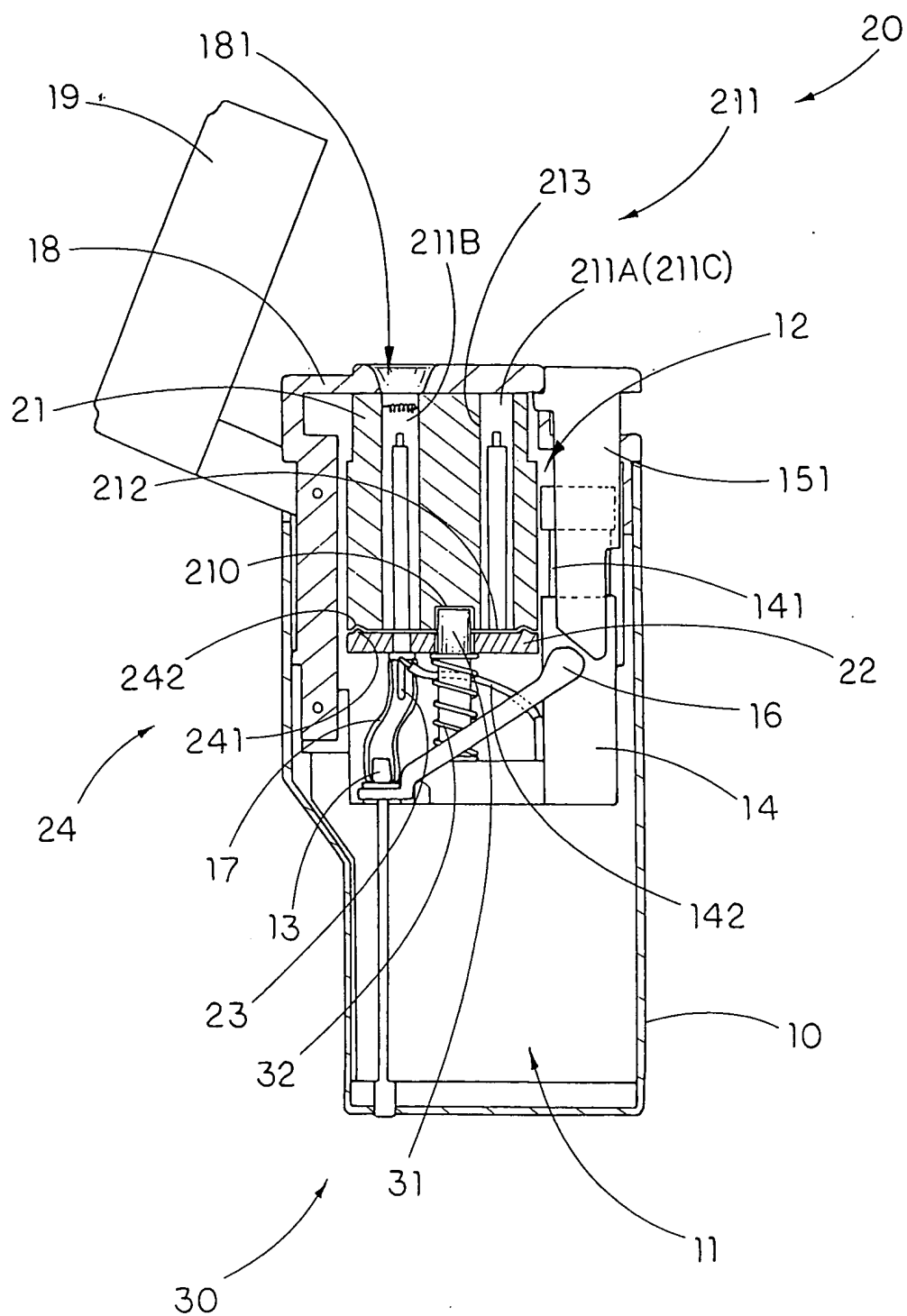


FIG. 3



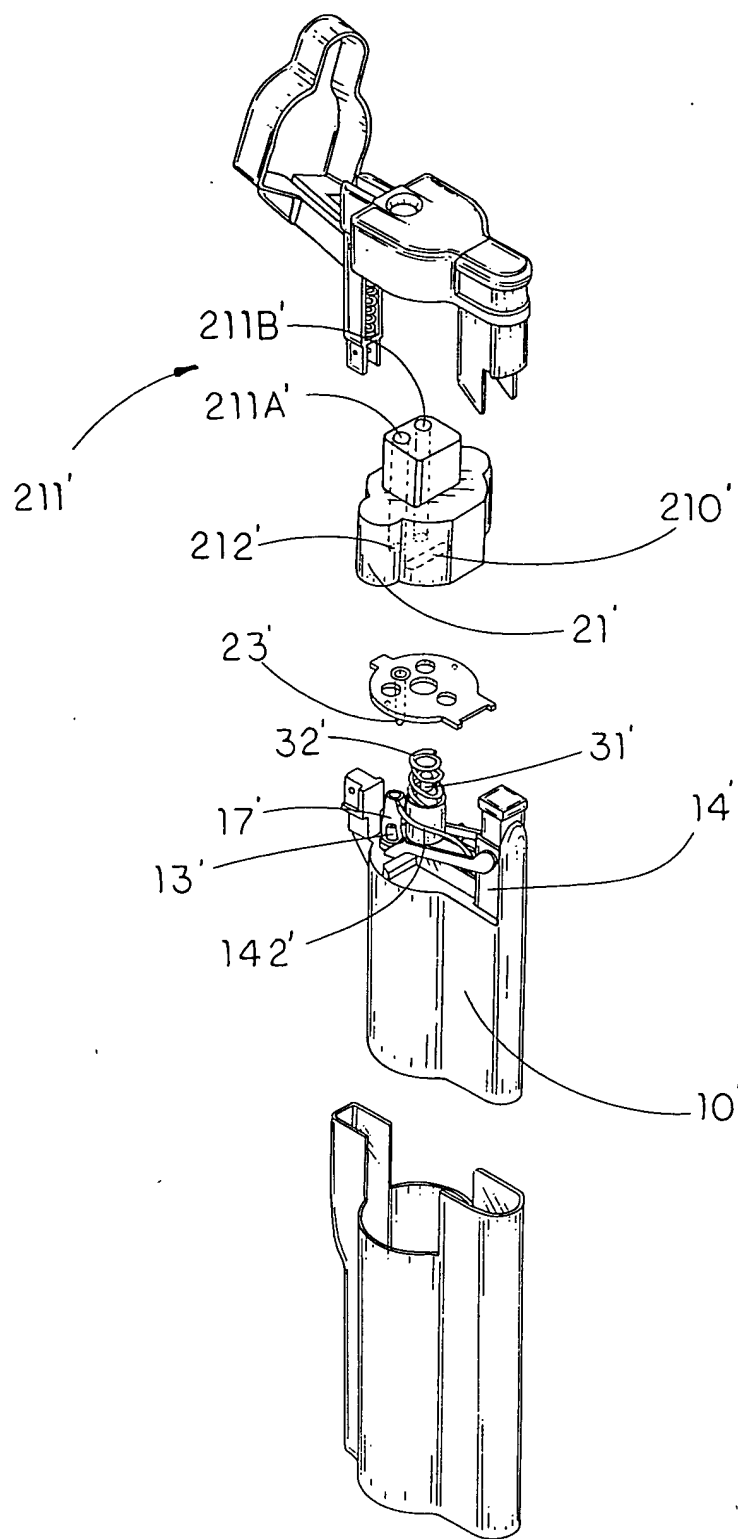


FIG. 4